

# Observations of the breeding biology and behaviour of Kozlov's Bunting *Emberiza koslowi*

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Kozlov's Bunting *Emberiza koslowi* is a relatively little known species, which is endemic to the Tibetan Plateau. This paper documents a previously unknown location, the environs of Kanda Shan Pass in Qinghai Province, where seven individuals were observed, including four singing males. Further, it describes for the first time the domed nest construction of the species, and the nest location. Brief descriptions are presented of pulli and the feeding activities of parent birds.

## INTRODUCTION

Kozlov's Bunting (Tibetan Bunting) *Emberiza koslowi* is one of six bird species strictly endemic to the Tibetan Plateau (Vaurie 1972), occurring in the remote south-east where Qinghai Province borders Xizang Autonomous Region (Tibet) (Figure 1). It has been recorded between 3,800 and 4,300 m in the upper reaches of tributary valleys of the Lancang Jiang (Mekong) and Jinsha Jiang (Yangtze) Rivers, being known from Qumarleb south to Chamdo and from Zadoi east to Yushu (Olsson 1995). The apparent breeding range, as presently understood, is located within the Eastern Tibet Endemic Bird Area, coded 134 (Stattersfield *et al.* 1997). The conservation status of this species is categorized as globally near-threatened by BirdLife International (Collar *et al.* 1994).

This bird is little-known: since its discovery in 1900 (Bianchi 1907) the species has been observed only in 1901, 1935 (Schäfer 1938), 1963 (specimens collected by Li De-hao and 1986 (Robson 1986), until the 1990s when it was encountered on a few occasions by birding tour groups (J. Hornskov pers. comm.). Only about 12 specimens have been collected (Olsson 1995). Information on historical observations, ecology, plumage characters and distribution was reviewed by Olsson (1995).

This note documents a previously unpublished location and aspects of the site, situation and construction of a nest, with comments on breeding biology, primarily habitat and timing. Excepting Olsson (1995) there is no information on such issues in the literature.

## OBSERVATIONS

On 28 July 1997 we observed seven individuals, including four singing males and two pairs, one attending an active nest containing three pulli, at c. 4,000 m, in the environs of Kanda Shan Pass, 32°10'N 96°30'E, Qinghai Province. This location is approximately 90 km south-west of Yushu and 30 km north of Nanqen (pronounced 'Non-chee'), being on the road between these major settlements.

The region between these local administrative centres is politically sensitive, presenting difficulties for independent foreign travellers. Yushu is open but access to surrounding regions, including the road between

Yushu and Nanqen, is restricted. Most of the species's range is not readily accessible because the road system is very limited. As a result, little is known about even the most basic aspects of the biology of this species, including issues such as ecology, movements, and breeding behaviour.

## NEST SITE AND SITUATION

Topographically, the site is a broad glaciated valley drained by occasional small streams. The initially gently sloping valley sides become progressively steeper, rising to bare rocky crags (with residual snow patches at the time of our observations) and extensive areas of scree. Montane scrub, dominated by *Cotoneaster*, occurs on lower slopes, either continuously or as a mosaic with grazed grassland. Seasonal grazing within the area appears to be moderately heavy. The dominant habitat of the area appears to be this scrub, although the nest observed was not located within this. Schäfer (1938) noted Kozlov's Bunting occurring in scrubby areas of *Cotoneaster*, *Juniperus*, *Berberis*, *Rosa* and *Ribes*.

The nest was situated c. 1 km north of the Kanda Shan Pass on a slope above the road; it was concealed within a small cluster of stems of a distinctive spiny shrub *Astragalus* (Leguminosae), approximately 20 cm in height on a 30° west-facing slope. This shrub was identified as probably either *Astragalus candolleanus* or *A. grahamiana* (Polunin and Stainton 1987). The bush in which the nest was located was shielded to the north by a small willow *Salix*, about 1 m in height. The nest entrance faced south-west. Vegetation on the slope within the immediate environs of the nest comprised low, grazed grass with scattered clusters of various alpine flowering herbs 20-40 cm in height, and patches of scattered *Astragalus*, rock-rose *Cistus* and *Salix*.

We were surprised to observe that the nest was a roofed structure, the upper portion being constructed and interwoven into the *Astragalus* stems both above and below the cup. Accordingly, the cup was completely surrounded by interwoven nest material, being accessed through an oval side entrance. Such a nest construction is apparently highly unusual, perhaps unique, among the genus *Emberiza*. The following dimensions were carefully estimated: height 12 cm, base of nest to rim of cup 7 cm, diameter of nest 10 cm, maximum diameter of cup interior 8 cm, width of nest entrance equal to nest diameter (10 cm), depth of nest entrance 4 cm.

The nest was constructed of dead grass and herb stems 1-2 mm in width. Similarly, the lining of the cup interior itself was dead grass. The base of the cup was at ground level. We did not remove the young and consequently the bowl of the cup was not investigated.

The three pulli were estimated to be twelve days in age, implying that the approximate hatching date was around 16 July and that breeding activity had commenced in late June or early July. Flight feathers were still 'in pin'. The following soft-part features were noted: bill and interior of mouth pale pink; yellow gape flanges c. 1.5 mm in width and still well-developed; irides dark brown. A few juvenile feathers had developed on the central and rear crown of all individuals.

A continuous watch was maintained on the nest site from nearby, for 3 hours 35 minutes during the period 09h55-13h30. During this time the young were fed by both parents, but primarily the male, over 21 visits. A variety of prey items were identified when food was brought to the young, including various small caterpillars, a crane-fly, grasshopper, small butterfly or

moth and several large dipterid flies. During the period of observation five faecal sacs were removed.

Approaches to the nest were tentative and circuitous, with individual parent birds lingering, perched on bushes in the immediate area before dropping to the ground and cautiously approaching, using available cover. Flights from the nest after feeding young were typically over distances of 200-300 m to foraging areas within patches of both grazed and longer grass and montane scrub.

## DISCUSSION

The nest of Kozlov's Bunting has apparently not been described before. The domed construction appears to be unique among buntings *Emberizinae*. The dome may be an evolutionary adaptation to the harsh climate of the region, although several other bunting species which inhabit especially cold and harsh climates do not build domed nests (Cramp and Perrins 1994).



Figure 1. The distribution of Kozlov's Bunting



These observations are also significant since Kanda Shan represents an additional locality for the species. The calls and songs heard at the site were very similar to those described by Olsson (1995). Interestingly, we observed a pair of Godlewski's Buntings *E. godlewskii* at the same altitude and in the same vicinity as the nesting pair of Kozlov's Buntings. This suggests that there is some degree of elevational sympatry between these species.

Olsson (1995) stated that Kozlov's Buntings observed in June 1993 were apparently not breeding, and speculated that the breeding season was late, as in many other high-altitude Tibetan species (Vaurie 1972). Our observations support this suggestion, indicating that young may hatch in mid-July; this also accords with the timing of breeding suggested by Byers *et al.* (1995).

Besides the nesting pair discussed, four males were observed (three in song) 500 m higher than the nesting pair, at the upper limit of the *Astragalus* and rock-rose *Cistus* scrub zone, and immediately below the main bare expanse of scree and cliffs. On 19 July 1995 seven males (five in song) and two females were observed at this site (P. Davidson *in litt.*), and the species was also recorded there during the same year by C. D. R. Heard (pers. comm.). Breeding may well be regular within the area. The valley floor and lower slopes are heavily grazed by yaks, which have degraded much of the habitat in this area through grazing.

Given the relatively large size of the species's apparent range, the lack of information on this bird is attributable to the inaccessibility of the area. There is perhaps scope for future re-assessment of the species's threat status

designation. Nonetheless, consensus exists among observers that the species is remarkably scarce in areas where it has recently been encountered.

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